APPENDIX

VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE CLAIMS AND SPECIFICATION

IN THE SPECIFICATION:

Page 1, third paragraph:

Various arrangements for measuring the speed and/or acceleration of a vehicle moving along a [surface] vehicle path such as a roadway have been known. One such device uses radiation sources on one side of the roadway, projecting a beam across the roadway to be received by a respective detector. The detectors are on the opposite side of the roadway from the radiation sources. The detectors detect when the beam is blocked by a wheel of the vehicle. A calculating circuit determines the speed and/or acceleration of the vehicle based on information from the detectors.

Page 3, second paragraph:

In accordance with one embodiment of the present invention, an apparatus is provided for determining the speed and/or acceleration of a [motor] vehicle traveling on a vehicle path. The apparatus has a first radiation source arranged at a first side of the vehicle path and a first reflector arranged on a second, opposite side of the vehicle path from the radiation source that reflects the radiation from the first radiation source back towards the first side of the vehicle path. A first detector is arranged at the first side of the vehicle path that receives the reflected

radiation from the first reflector and detects a presence or absence of the reflected radiation. A second radiation source is arranged at the first side of the vehicle path and a second reflector is arranged on the on the second, opposite side of the vehicle path from the second radiation source that reflects the radiation from the second radiation source back towards the first side of the vehicle path. A second detector is arranged at the first side of the vehicle path that receives the reflected radiation from the second reflector and detects a presence or absence of the reflected radiation. A controller which is operatively connected to the first and second detectors calculates at least one of the speed and acceleration of the [motor] vehicle in response to the detection by the first and second detectors.

Page 4, first complete paragraph:

The invention provides a method for measuring at least one of the speed and acceleration of a vehicle traveling on a vehicle path by emitting radiation from a first side of the vehicle path, then reflecting the radiation emitted at a second, opposite side of the vehicle path back towards the first side of the vehicle path. The reflected radiation is received at the first side of the vehicle path and a presence or absence of the reflected radiation is detected. At least one of the speed and acceleration of the [motor] vehicle is calculated in response to the detecting step.

Page 8, second complete paragraph:

As the vehicle drives through the remote sensing system 10, the vehicle's tires interact with the projected and reflected beams, and the vehicle's speed and/or acceleration can be measured based on detected blocking and/or unblocking of the beams. A single external computer

system 22 receives signals from the microcontrollers 20 of each bar 16 in use via an interface such as an RS232 interface 23, and can calculate the vehicle's speed and/or acceleration. The computer system 22 can also supply power to the S/D bar unit(s) 16. In a preferred embodiment, the S/D unit(s) 16 also include a tilt sensor 24. The computer 22 can be a personal computer or a personal digital assistant or other suitable device.

Page 14, last paragraph:

In a preferred embodiment, the S/D bar units 16 can be adjusted to position the height of the laser beam above the vehicle path surface, such as a roadway, and also to orient the beam to be at least substantially parallel to the surface. To accomplish this, the bar units 16 may be provided with adjustable legs [24] 27, 26, 28 that support the bar units 16, 18 as shown in FIGS. 2-6.

Page 15, second paragraph:

After the segments 30 and 32 have been attached together using the connecting unit 34 and the pins 36, a L-shaped rear plate 38 is attached to the back side of the segments 30 and 32 via attachment screws 40. The rear plate 38 may be provided with a stiffening flange 52 as shown. The rear plate 38 has a vertical housing at its rear corner for receiving an adjustable leg [24] 27. The adjustable leg [24] 27, as can be best seen in the side view of FIG. 6, has a number of holes drilled therethrough one inch (2.54 cm) apart and a releasable pin 42 can be inserted though the housing and a respective hole in the leg [24] 27 in order to provide one inch (2.54 cm) height adjustment for the leg [24] 27 relative to the rear plate 38 and bar assembly 30, 32.

The bar segment 30 has a leg 26 that is similarly height adjustable by a pin 44. The bar segment 32 also has a leg 28 that is height adjustable by a pin 46.

Page 15, last paragraph:

By virtue of the releasable pins 42, 46, 48 , each of the legs [24] 27, 26 and 28 can be independently height adjusted to effect coarse adjustment. It is also possible in the preferred embodiment to effect a more fine adjustment on each leg [24] 27, 26, and 28 by the lower portion of each leg having a threaded foot 50 that can be rotated to raise or lower the foot 50 by fine amounts relative to its respective leg [24] 27, 26, and 28. The foot 50 is designated by the reference numeral 50 throughout, because the threaded insertion of the foot into the respective legs [24] 27, 26 and 28 is the same for each leg.

Page 16, first complete paragraph:

Referring now particularly to FIG. 6, it will be appreciated that the arrangement of the legs [24] 27, 26 and 28 permits the S/D bar 16 including the L-shaped rear portion 38 to be adjusted for use on a flat surface, or on a curbed or uneven surface. For example, in the configuration shown in FIG. 6, the rear leg [24] 27 is in a primarily upward position so that it can rest in the top of a curb, while the front legs 26 and 28 can rest on a pavement surface below the curb. For use on a flat roadway surface, the rear leg [24] 27 could be lowered into a fully lowered state, in which the feet of the legs [24] 27, 26 and 28 would be generally in the same horizontal plate, and could rest on a roadway surface. The adjustment of the legs [24] 27, 26 and 28, including both fine and coarse adjustments in the preferred embodiment, also permits the S/D

bar 16 to be used on a crowned or otherwise inclined road surface, and still permit a generally horizontal beam.

Page 17, first complete paragraph:

The S/D bar 16 also includes the microcontroller 20 mounted internally of the bar 16 at the location shown. An indicator such as three holes having LED's 54 mounted therein is provided on the front surface of the bar unit 32. The LED's indicate when the entire arrangement including the bars 16 and 18 are in alignment as discussed in more detail below. The end 56 of the S/D bar 16 may have an attachment arrangement that corresponds to the other end 58 of the bars, so that the bars may be cascaded or daisy chained together. Connections 56 and 58 may also include connections for power and/or data transmission. When one bar is used alone, or in the case of the end bar of the daisy chained combination, the connector 56 may be connected directly to external computer 22 via a RS232 interface [24] 23.

Page 17, last paragraph:

In a preferred embodiment, there are three S/D units 12 on each S/D bar 16, equally spaced from each other, and there are three retro-reflector matrixes [60] 14 on each reflector bar 18, also equally spaced from each other. However, the number of units and their spacing may be modified as desired in other embodiments.

Page 18, second complete paragraph:

The construction described above also permits for ready disassembly of the bars. For example, when not in use, the S/D bar 16 can be separated by pulling out the pins 36 and undoing the screws 40. The legs [24] 27, 26 and 28 can also be removed from their respective housings. After this disassembly, the various individual components will now be: the bar portion 30, the bar portion 32, the L-shaped rear portion 38, the connector 34, and the legs [24] 27, 26 and 28. These various components can be arranged in a compact fashion for storage and/or transport.

IN THE CLAIMS:

1. (Amended) An apparatus for measuring at least one of a speed and acceleration of a vehicle traveling on a vehicle path, the apparatus comprising:

a first radiation source that emits radiation arranged at a first side of the vehicle path;

a first reflector arranged on a second, opposite side of the vehicle path from said first radiation source that reflects radiation emitted from said first radiation source back towards the first side of the vehicle path;

a first detector arranged at the first side of the vehicle path that receives the reflected radiation from said first reflector and detects a presence and absence of the reflected radiation;

a second radiation source that emits radiation arranged at the first side of the vehicle path;

a second reflector arranged on the second, opposite side of the vehicle path from said second radiation source that reflects radiation emitted from said second radiation source back towards the first side of the vehicle path;

a second detector arranged at the [second] first side of the vehicle path that receives the reflected radiation from said second reflector and detects a presence and absence of the reflected radiation;

said first and second radiation sources separated substantially the same distance apart along the vehicle path as said first and second reflectors, with said radiation sources positioned substantially in the same plane of the vehicle path as said reflectors; and

a controller operatively connected to said first and second detectors that calculates at least one of the speed and acceleration of the [motor] vehicle in response to said first and second detectors.

Cancel claim 5 without any prejudice or disclaimer.

8. (Amended) An apparatus according to claim 2, wherein said first and second sender/detector units are each affixed into a permanent installation on [the] a first side of [a roadway] the vehicle path.

9. (Amended) An apparatus according to claim 3, wherein said first and second reflectors are each affixed into a permanent installation on [the] a second, opposite side of [a roadway] the vehicle path.

14. (Amended) An apparatus according to claim 13, wherein the modulated laser beam source modulates a beam [is modulated] at a rate greater than approximately 20 kHz.

15. (Amended) An apparatus according to claim 1, further comprising a tilt sensor that measures a tilt of the vehicle path relative to a level path, wherein said controller determines

[the] a Vehicle [specific] Specific [power] Power of the vehicle due to calculated acceleration and measured tilt.

16. (Amended) An apparatus for measuring at least one of a speed and acceleration of a vehicle traveling on a vehicle path, the apparatus comprising:

first radiation means for emitting radiation arranged at a first side of the vehicle path;

first reflector means arranged on a second, opposite side of the vehicle path from said first radiation means for reflecting radiation emitted from said first radiation means back towards the first side of the vehicle path;

first detector means arranged at the first side of the vehicle path that receives the reflected radiation from said [second] first reflector means for detecting a presence or absence of the reflected radiation;

second radiation means for emitting radiation arranged at the first side of the vehicle path;

second reflector means arranged on the second, opposite side of the vehicle path from said second radiation means for reflecting radiation emitted from said second radiation means back towards the first side of the vehicle path;

second detector means arranged at the [second] first side of the vehicle path that receives the reflected radiation from said second reflector means for detecting a presence or absence of the reflected radiation; and

calculating means operatively connected to said first and second detectors, for calculating at least one of the speed and acceleration of the [motor] vehicle in response to said first and second detectors.

17. (Amended) A method according to claim 16, wherein the first and second radiation and detector means are each affixed to a permanent installation on [the] a first side of [a roadway] the vehicle path.

18. (Amended) A method according to claim 16, wherein the first and second reflector means are each affixed to a permanent installation on [the] a second, opposite side of [a roadway] the vehicle path.

19. (Amended) A method for measuring at least one of a speed and acceleration of a vehicle traveling on a vehicle path, comprising the steps of:

emitting radiation from a first side of the vehicle path;

reflecting radiation emitted from said radiation emitting step at a second, opposite side of the vehicle path back towards the first side of the vehicle path;

receiving at the first side of the vehicle path the reflected radiation from the reflecting step;

securing said radiation emission and radiation reflection in substantially the same plane as the vehicle path;

detecting a presence or absence of the reflected radiation; and

calculating at least one of the speed and acceleration of the [motor] vehicle in response to the detecting step.

Cancel claim 20 without any prejudice or disclaimer.

25. (Amended) A method according to claim 19, further comprising the steps of:

measuring a tilt of the vehicle path relative to a level path; and

determining [the] a Vehicle [specific] Specific [power] Power of the vehicle due to the calculated acceleration based in part on the measured tilt.

26. (Amended) An apparatus for measuring at least one of a speed and acceleration of a vehicle traveling on a vehicle path, comprising:

means for emitting radiation from a first side of the vehicle path;

means for reflecting radiation emitted from said radiation emitting step at a second, opposite side of the vehicle path back towards the first side of the vehicle path;

means for receiving at the first side of the vehicle path the reflected radiation from the reflecting step;

means for securing said radiation emitting means and securing said reflecting radiation means in substantially the same plane as the vehicle path;

means for detecting a presence or absence of the reflected radiation; and

means for calculating at least one of the speed and acceleration of the [motor] vehicle in response to the detecting step.

27. (Amended) An apparatus according to claim 26, further comprising:

means for measuring a tilt of the vehicle path relative to a level path; and

means for determining [the] a Vehicle [specific] Specific [power] Power of the vehicle due to the calculated acceleration based in part on the measured tilt.